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# M 133.02: Geometry and Measurement for Elementary School Teachers

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**GEOMETRY AND MEASUREMENT FOR ELEMENTARY SCHOOL TEACHERS**  
**MATHEMATICS 133 SECTION 2**  
**CRN 73569**

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**WEBPAGE** <http://umonline.umn.edu/>

**GOALS** Upon completion of this course, a student will be able to:

1. Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships;
2. Apply transformations and use symmetry to analyze mathematical situations;
3. Use visualization, spatial reasoning, and geometric modeling to solve problems;
4. Describe and apply measurable attributes of objects and the units, systems, and processes of measurement;
5. Apply appropriate techniques, tools and formulas to determine measurements for length, area, and volume;
6. Develop a deep understanding of the mathematical concepts needed for effective teaching by developing the ability to examine and explain underlying mathematical structure in using multiple geometric representations and tools for solving problems.

**TEXT** Mathematics for Elementary School Teachers, 5th Edition (Sybilla Beckmann)

**LETTER GRADE** Your letter grade in the course will be determined by assessment of your ***understanding*** of predefined learning standards. For each standard, I will write an assessment that will provide me with the ability to assess your understanding on a 4-point scale according to:

Score	Student demonstrates...	Classification
4	...mastery beyond the learning target	Beyond Proficient
3	...full mastery of the learning target	Proficient
2	...partial mastery of the learning target	Nearing Proficient
1	...minimal mastery of the learning target	Novice
0	...no mastery of the learning target	Beginner

Each mid-semester exam will assess 3 or 4 standards. You will have the opportunity to “challenge” your first assessment results one time during the semester. Each project will assess 1 standard. You will not have the opportunity to challenge any project assessment results. Let  $S$  be your average score over all assessments, then, your letter grade in the course will be determined according to:

$$\begin{aligned} 3.50 < S \leq 4.00 &\Rightarrow A \\ 3.00 < S \leq 3.50 &\Rightarrow B \\ 2.50 < S \leq 3.00 &\Rightarrow C \\ 2.00 < S \leq 2.50 &\Rightarrow D \\ 0 < S \leq 2.00 &\Rightarrow F \end{aligned}$$

$\pm$  GRADE Your plus/minus grade will be determined by assessment of your *effort* in the course. This aspect will be measured through the collection of homework practice and reading quizzes. Let  $T$  be the proportion of homework practice and reading quizzes earned out of the total possible, then, your plus-minus grade will be assigned according to:

$$\begin{array}{rclclcl} 0.90 & \leq & T & < & 1.00 & \Rightarrow & + \\ 0.80 & \leq & T & < & 0.90 & \Rightarrow & \\ 0 & \leq & T & < & 0.80 & \Rightarrow & - \end{array}$$

Please note that there is no “A+” grade given at the University of Montana.

HONESTY All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at the following web address:

[http://life.umt.edu/vpsa/student\\_conduct.php](http://life.umt.edu/vpsa/student_conduct.php).

ACCOMMODATION The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors and Disability Services for Students (DSS). If you think that you may have a disability adversely affecting your academic performance, and you have not already registered with DSS, please contact DSS in Lommassen 154. I will work with you and DSS to provide an appropriate accommodation.

POLICIES You must earn a C- or better in this course to pass the requirement in the School of Education. You may change to Credit/No Credit up the last day of the class. Credit will be awarded to students earning a D- or better. However, if you choose this option the grade cannot be counted towards the School of Education requirement nor the UM graduation requirement.

DATES September 17th is the last day to drop or add the course using Cyberbear. October 29th is the last day to drop with instructor and advisor signatures. December 7th is the last day to drop the course or change grading option using a late drop form. Acceptable reasons for a late drop are listed in the university catalog and include reasons such as accident, illness, family emergency or a change in work schedule. The following examples are not considered sufficient for a late drop: protecting GPA, forgetting to turn in the change slip, losing financial aid, losing eligibility to engage in sports.

## SEMESTER SCHEDULE

Monday	Wednesday	Friday
Aug 27 10-1	Aug 29 10-1	Aug 31 10-2
Sep 3 Labor Day	Sep 5 10-3	Sep 7 10-4
Sep 10 10-4	Sep 12 LAB	Sep 14 Assessment
Sep 17 11-1	Sep 19 11-2	Sep 21 11-3
Sep 24 11-4	Sep 26 LAB	Sep 28 Assessment
Oct 1 12-1	Oct 3 12-2	Oct 5 12-3
Oct 8 12-4	Oct 10 12-4	Oct 12 12-5
Oct 15 12-6	Oct 17 12-7	Oct 19 12-8
Oct 22 12-9	Oct 24 LAB	Oct 26 Assessment
Oct 29 13-1	Oct 31 13-2	Nov 2 13-3
Nov 5 13-4	Nov 7 LAB	Nov 9 Assessment
Nov 12 Veteran's Day	Nov 14 14-1	Nov 16 14-2
Nov 19 14-3	Nov 21 Thanksgiving	Nov 23 Thanksgiving
Nov 26 14-4	Nov 28 14-5	Nov 30 14-5
Dec 3 14-6	Dec 5 14-6	Dec 7 14-7
<p style="text-align: center;">Final Assessment Friday, December 14, 8:00-10:00AM</p>		

## HOMEWORK ASSIGNMENTS

Section	Problems for Section	Due Date
10.1	2,3,7,8,11	Sep 5
10.2	6,	Sep 7
10.3	1,3	Sep 10
10.4	3,5,7,9,12,16	Sep 14
11.1	2,5	Sep 21
11.2	1,4,6	Sep 24
11.3	3,5	Sep 26
11.4	1,3,7,9,12,14,17,19	Sep 28
12.1	1,3,5	Oct 5
12.2	2,3,4,7	Oct 8
12.3	2,3,4,5,8,9,11	Oct 10
12.4	2,4,5,9,10,11,13	Oct 15
12.5	1,3,4,6,7	Oct 17
12.6	2,3,5,6,8	Oct 19
12.7	1,3	Oct 22
12.8	4,6,8,10,12	Oct 24
12.9	1,2,3,7	Oct 26
13.1	2,3,4,7,8	Nov 2
13.2	3,4,7,11,13,15	Nov 5
13.3	2,3,7,11,12,14,15,18,22	Nov 7
13.4	1,2,3	Nov 9
14.1	1,2,3,4,5,8,17,18	Nov 19
14.2	2,4,7,8,12	Nov 26
14.3	1,2,7,8,9,10,	Nov 28
14.4	1,4,5,6,7,8	Nov 30
14.5	2,3,4,5,8,9	Dec 5
14.6	1,2,3,5,6,8,9	Dec 14
14.7	1,4,5,6,7	Dec 14

### Homework Philosophy

I view homework assignments as *formative* assessments. Formative assessments are meant to give students feedback so that adjustments in learning can be made to improve learning outcomes measured in *summative* assessments (i.e. mid-semester and final exams). As such, I expect you to correct your own homework assignments before handing them in for credit. This arrangement gives you immediate feedback on your understanding of course content and the opportunity to correct your misunderstandings and errors in thinking.

### Homework Policies

- Corrected homework for each chapter is due at the start of the class period on the date indicated above. I do not accept late homework for any reason.
- Homework must be submitted on quad ruled loose leaf paper without frayed edges, homework must be done in pencil, and multiple pages must be neatly stapled.
- Homework solution keys will be provided on our class webpage at 5PM on the night before the homework is due in class. Use a colored pen to correct your homework and make notes to yourself. Your homework effort will only be counted if every problem has been attempted and corrected.